CLAIMS

1) Device for the diffusion of virtual images into a user's visual field, superposed onto his perception of ambient images of the environment in which he finds himself, said device comprising virtual image diffusion means (108,109,110) in relation to a remote image-producing source (104), said virtual image diffusion means (108,109,110) being attached to a facial mounting (101) and combining a unit (108) for displaying the virtual images produced and an optical system (109,110) for resending towards the user's pupil, virtual images displayed by the display unit (108), said optical system (109,110) comprising at least one mirror (109) reflecting the virtual images displayed by the display unit (108) towards a terminal lens (110) for projecting the reflected images, the whole assembly achieving complete integration in a spectacle mounting
characterized in that
said display unit (108) is oriented transversally to the frontal direction D of the user's vision and transversally to a plane orthogonal to this direction D, the display unit (108), mirror (109) and terminal lens (110) composing the virtual image diffusion means (108,109,110) being attached laterally to the facial mounting (101) whilst being oriented in relation to each other in order to former a prism, the edges of which are approximately defined by their corresponding edges, in order to allow a biased diffusion towards the user's pupil of the virtual images projected by the terminal lens (110), from a lateral zone (103) of the mounting (101), in which zone (103) the virtual image diffusion means (108,109,110) are assembled.

2) Device according to claim 1,
characterized in that
the display unit (108), the mirror (109) and the terminal lens (110) are together carried by a chassis (111) attached to the mounting (101) via means of mobility, such that the mounting (101) is equipped with means for adjusting the position of the image projected towards the user's pupil,

starting from a displacement of the whole assembly composing the virtual image diffusion means (108,109,110).

3) Device according to claim 2,
characterized in that
the chassis (111) is arranged in an envelope (121,122) inside which the display unit (108), the mirror (109) and the terminal lens (110) are attached, such that the chassis (111) is arranged in a dark chamber inside which the units (108,109,110) composing the virtual image diffusion means are assembled in proximity to one another.

4) Device according to claim 3,
characterized in that
the dark chamber (111) is composed of two half-shells (121,122) joined together by interlocking, and which accommodate between them the display unit (108), mirror (109) and lens (110), the whole forming a dark chamber (111) comprising clearances in order to allow respectively the lateral emergence of the lens (110) and access to the rear surface of the display screen (108) with a view to its connection to the remote image-producing source (104).

5) Device according to any one of claims 2 to 4,
characterized in that
the means of mobility of the chassis (111) on the facial mounting comprise a control arm (113,114) arranged as a telescopic unit, on which telescopic control arm (113,114) the chassis (111) is mounted in a pivoting manner (124), the chassis (111) being moreover mounted in a pivoting manner (123) on the mounting such that the means for adjusting the position of the image projected towards the user's pupil are constituted by the telescopic arm (113,114) for control of the chassis (111), and by the pivoting guiding of the chassis (111) on the mounting.

6) Device according to claim 5,
characterized in that
the telescopic control arm (113,114) is principally constituted by a toothed wheel (114) mounted in a turning manner on the facial mounting (101) and by a finger (113) circulating in translation inside the toothed wheel (114) by screwing, the finger (113) carrying the chassis (111) pivoting at its terminal end.

7) Device according to any one of the previous claims,

characterized in that
the terminal lens (110) is equipped with means (112) for adjusting its focal length.

8) Device according to any one of claims 2 to 7,
characterized in that
it comprises a support unit (116,117) shared by the chassis (111) and its means of mobility (113,114), which is equipped with means of connection (125,127) to the lateral zone of the mounting.

9) Device according to claim 8,
characterized in that
the support unit is arranged in a case made of two half-shells (116,117) joined together by interlocking, in order to envelope the chassis (111) carrying the virtual image diffusion means (108,109,110) and its means of mobility (113,114).

10) Device according to claim 9,
characterized in that,
the mounting being a pair of spectacles, the means for connecting the case (116,117) to the mounting are constituted by a lateral opening (125) made in one (102) of the spectacle eyeglasses, in order to receive by sliding interlocking the case (116,117), itself provided with slides (127) for receiving the lower and upper edges of the opening (125).